

**REMARKS**

This paper is submitted in response to the Office action dated June 22, 2009 (the “Office Action”).

Claims 39-40, 44-47, 49-57, 59-62, 64-65, 67, and 71-74 are pending in the application.

Claims 39-40, 44-47, 49-57, 59-62, 64-65, 67, and 71-74 stand rejected.

The amendments add no new matter. Support for the amendments may be found throughout Applicant’s Specification and Drawings as originally filed, for example on p. 3, lines 6-8; p. 5, lines 4-8; p. 5, lines 19-22; p. 6, lines 4-6; p. 6, lines 20-24; p. 6, line 24—p. 7, line 2; p. 7, lines 12-13; p. 8, lines 21-22; and p. 9, lines 9-12. While not conceding that the cited reference(s) qualify as prior art, but instead to expedite prosecution, Applicant has chosen to respond as follows. Applicant reserves the right to establish that the cited reference(s), or other references cited thus far or hereafter, do not qualify as prior art as to an invention embodiment previously, currently, or subsequently claimed. Applicant also reserves the right, for example in a continuing application, to pursue the previously pending claims or claims similar thereto. Applicant respectfully submits that the pending claims are allowable in view of the following remarks and the above amendments, and respectfully requests reconsideration of the pending rejections.

**Rejections under 35 U.S.C. § 103(a)**

Claims 39-40, 44-47, 49-57, 59-62, 64-65, 67, and 71-74 stand rejected under § 103(a) as purportedly being unpatentable over U.S. Patent No. 6,870,921 issued to Elsey et al. (“**Elsey**”) in view of an article by Thomas, “Team-based Access Control (TMAC): A Primitive for Applying Role-based Access Controls in Collaborative Environments,” *Proceedings of the second ACM workshop on Role-based access control*, pp. 13-19 (1997) (“**Thomas**”), and in view of an article by Sandhu et al., “The NIST Model for Role-Based Access Control: Towards A Unified Standard,” 17 pp., provided by the Examiner and cited by the Examiner as pp. 47-63 of the *Proceedings of the fifth ACM workshop on Role-based access control*, ACM (2000) (“**Sandhu**”). Applicant respectfully submits that the amended claims are allowable under § 103(a) because the

cited portions of the reference do not disclose or fairly suggest each limitation of Applicant's claims.

**Sandhu's conflicts of interest are not equivalent to a condition of access authorization.**

For example, independent claim 39 includes an access control subsystem. The access control subsystem is configured to provide access to a user, but only when the user has an access authorization. The access authorization is based at least in part on the whether the user is in communication with a customer of a first tenant. Moreover, the access control subsystem is configured to **deny access to at least one other virtual database when the user has the access authorization to the first virtual database.** (Emphasis added.) At least these limitations are absent from the cited portions of Elsey, Thomas, and Sandhu, whether taken individually or in combination.

With regard to the denial of access, the Office Action cites § 5.1 of Sandhu, titled "Static Separation of Duty" (SSD). This section and the subsequent section (§ 5.2, "Dynamic Separation of Duty" (DSD)) relate to prohibiting users from being members of different roles that have conflicts of interest.

However, the cited sections of Sandhu fail to disclose denial of access to one virtual database when a user has access authorization to a different database. Applicant notes that restrictions based at least in part on data content are distinct from restrictions based at least in part on conflicts of interest. Indeed, Sandhu itself illustrates this shortcoming.

In Sandhu's example of separation of duties, "if a user is authorized as a member of one role, the user is prohibited from being a member of a second role." See Sandhu, § 5.1. Sandhu provides an example in which:

a user who is authorized for the role Billing Clerk may not be authorized for the role Accounts Receivable (AR) Clerk . . . . That is, the roles Billing Clerk and Accounts Receivable Clerk are mutually exclusive.

Sandhu, § 5.1. Sandhu goes on to observe that some separations of duties can involve switching of roles, as long as the roles are not assumed simultaneously:

For example, a user may be authorized for both the roles of Cashier and Cashier Supervisor, where the supervisor is allowed to acknowledge corrections to a Cashier's open cash drawer. If the individual acting in the role Cashier attempted to switch to the role Cashier Supervisor, RBAC would require the user to drop his or her Cashier role, and thereby force the closure of the cash drawer before assuming the role Cashier Supervisor. As long as the same user is not allowed to assume both of these roles at the same time, a conflict of interest situation will not arise.

Sandhu, § 5.2.

Even assuming that the foregoing provides some manner of basis for the position espoused in the Office Action (a point which Applicant does not concede), Sandhu fails to disclose a denial of access "when the user has the access authorization to the first virtual database." A person having ordinary skill in the art would readily appreciate that a condition of having access authorization to one virtual database not equivalent to a condition that involves a conflict of interest. Various situations require access to multiple databases without invoking conflicts of interest. Similarly, conflicts of interest arise without involving access to more than one virtual database. The condition in claim 39 of a user having access authorization to a first virtual database is therefore not equivalent to (and indeed, is fully independent from) Sandhu's condition of a conflict of interest.

At least for this reason, Sandhu fails to disclose or fairly suggest an access control subsystem that is configured to **"deny . . . access to at least one other virtual database when the user has the access authorization to the first virtual database,"** as recited in Applicant's claim 39. As noted in the Office Action, the cited passages of Elsey do not remedy this shortcoming of Sandhu. See Office Action, p. 5. Applicant also does not find this limitation within the cited portions of Thomas. Independent claim 39 and all claims dependent therefrom are therefore allowable under § 103(a). At least for similar reasons, independent claims 46 and 64 and all claims dependent therefrom are also allowable under § 103(a).

**The cited passages fail to disclose a denial of access to a virtual database that “corresponds to at least one tenant other than the first tenant.”**

Nonetheless, in an effort to advance prosecution, Applicant has amended the independent claims. As noted above, independent claim 39 recites that the access authorization is based at least in part on the whether the user is in communication with a customer of a first tenant. As amended, claim 39 further recites that **the at least one other virtual database to which access is denied “corresponds to at least one tenant other than the first tenant.”** Applicant does not find this limitation in the cited passages.

Indeed, Sandhu’s example of separation of duties is additionally incongruous with this limitation. Sandhu teaches that a separation of duties can involve common access to a shared resource: in the above-quoted example, the “cash drawer” is used both by Cashier and by Cashier Supervisor. Even if this resource of a cash drawer could be equated with the virtual databases in claim 39 (a point which Applicant does not concede), Sandhu’s teachings regarding this cash drawer are not even analogous to the relationships recited in claim 39. Sandhu’s sharing of a common resource (the cash drawer) is counter to the allowed and denied access in claim 39, which apply to distinct resources. Sandhu denies simultaneous access *to a single resource (cash drawer) by more than one role* unless the roles are played by more than one users.

In contrast, claim 39 denies simultaneous access *by a single user to more than one resource (virtual databases)*. Access is allowed to files in a first virtual database corresponding to a first tenant, and access is denied to at least one other virtual database, which corresponds to at least one tenant other than the first tenant. In particular, claim 39 recites that the at least one other virtual database to which access is denied “corresponds to at least one tenant other than the first tenant.”

These limitations regarding denied access based on relationships to tenants, is additionally absent from the cited passages of Elsey, Thomas, and Sandhu, whether taken individually or in combination with each other and the knowledge available to a skilled person. At least for this reason, independent claim 39 and all claims dependent therefrom are additionally allowable under § 103(a). At least for similar reasons, independent claims 46 and 64 and all claims dependent therefrom are also additionally allowable under § 103(a).

CONCLUSION

In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5097.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. The undersigned hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. §§ 1.16 or 1.17, be charged to deposit account no. 502306.

I hereby certify that this correspondence is being submitted to the U.S. Patent and Trademark Office in accordance with 37 C.F.R. § 1.8 on September 22, 2009 (CDT) by being (a) transmitted via the USPTO's electronic filing system; or (b) transmitted by facsimile to 571-273-8300; or (c) deposited with the U.S. Postal Service as First Class Mail in an envelope with sufficient postage addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia, 22313-1450.

  
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Date

Respectfully submitted,



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